07/17/2017 14:45 UTC

The following graphs represent the first launch for Langley Research Center (LaRC; 37.1024, -76.3929) and the Chesapeake Bay Bridge Tunnel 3rd Island (CBBT; 37.0366, -76.0767) on 07/17/2017 at approximately 14:45 UTC. Data for the CBBT sonde appears to have had a temporary sampling issue in the first 100 m, so the beginning 100 m in the following plots for CBBT are likely dismissible. This launched coordinated with the SERC water measurements. Preliminary analysis at both CBBT suggests a possible boundary layer capped at ≈500 m and a possible boundary layer capped at 400 m for LaRC. Potential temperature profile was in very close agreement between CBBT and LaRC from 100 m to 5000 m, with LaRC generally having about 1 K higher potential temperature throughout the profile.

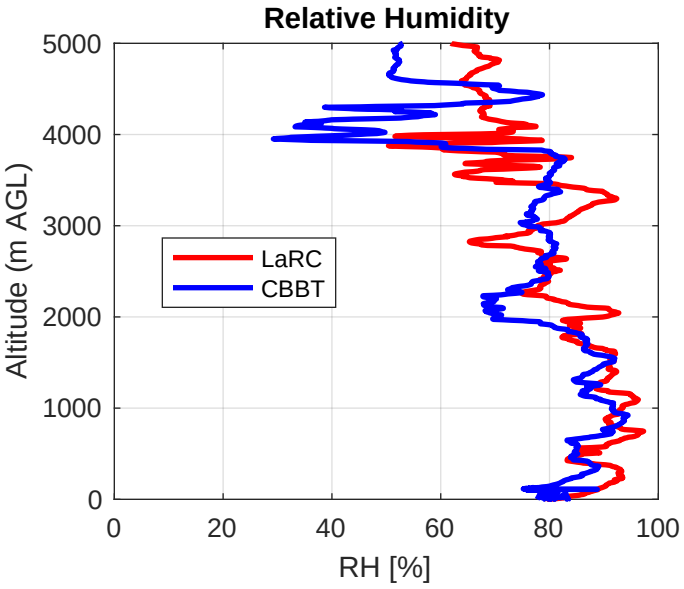
Preliminary observations suggest similar ozone mixing ratio profiles above CBBT and LaRC with slight variations. LaRC appears to have a slightly higher ozone mixing ratio compared to CBBT throughout the profile with a maximum disagreement of about 7 ppbv. Ozone mixing ratio above both CBBT and LaRC appears to have generally increased in a semi-linear profile from about 1000 m to 5000 m with a change of about 45 ppbv.

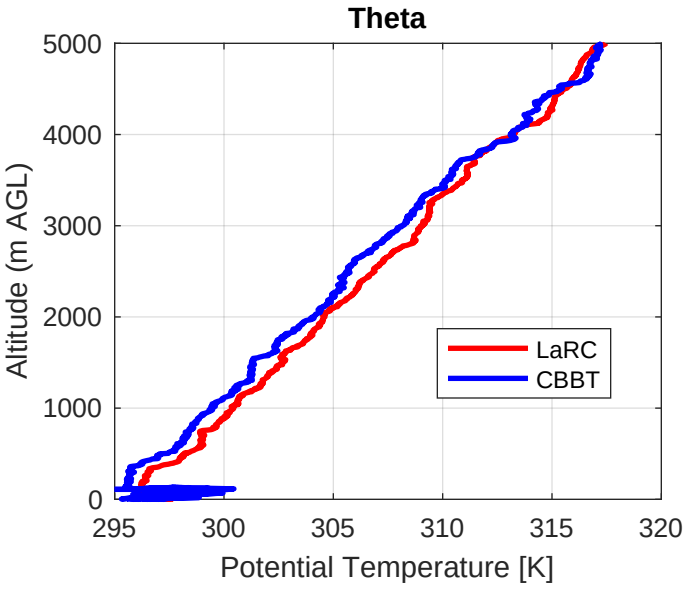
PLEASE NOTE: This data is preliminary and should not be used for official business until certified by NASA technical staff.

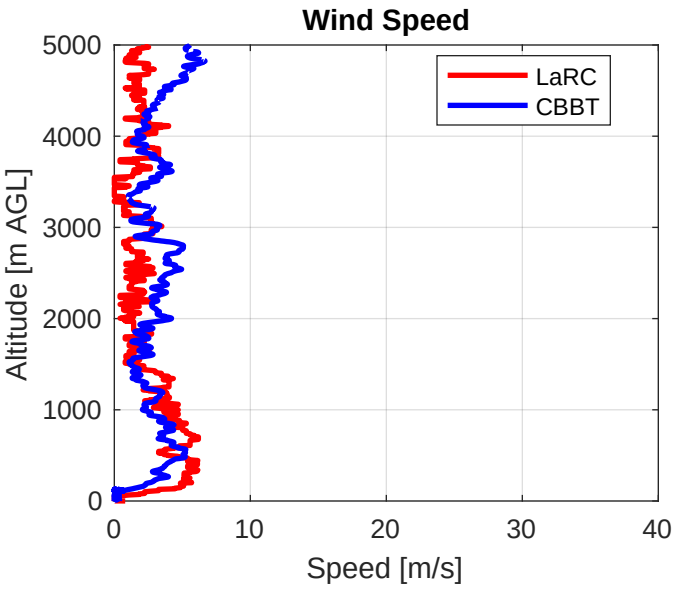
LaRC Sonde POC: John Sullivan (john.t.sullivan@nasa.gov)

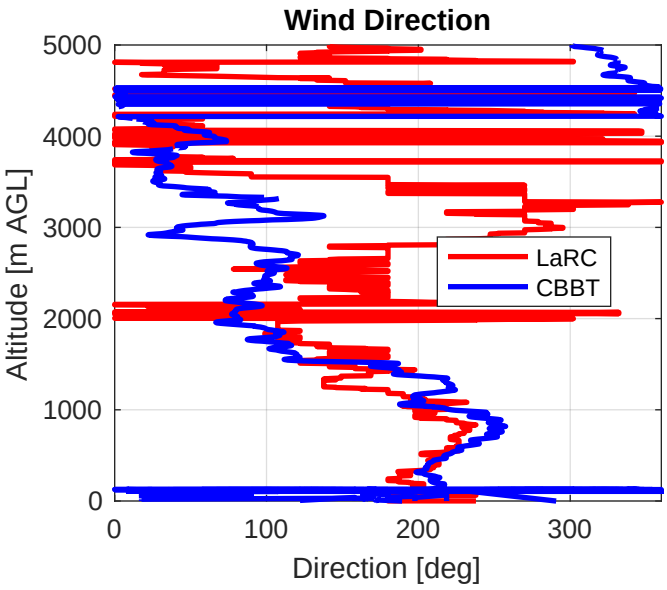
CBBT Sonde POC: Travis Knepp (travis.n.knepp@nasa.gov)

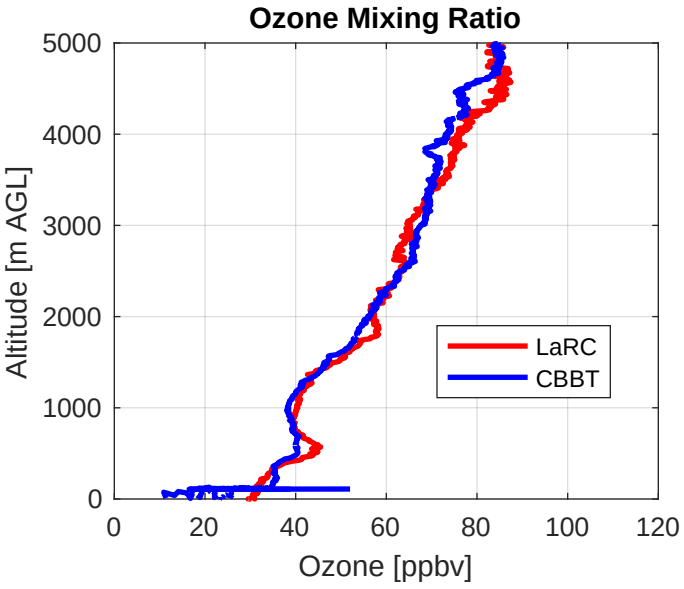
Sonde Data: 07/17/2017 14:47 UTC (LaRC) and 13:48 UTC (CBBT)

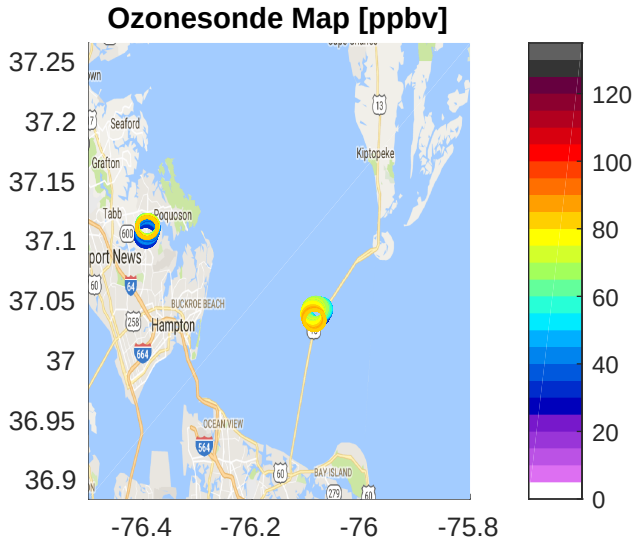












07/17/2017 19:45 UTC

The following graphs represent the second launch for Langley Research Center (LaRC; 37.1024, -76.3929) and the Chesapeake Bay Bridge Tunnel 3rd Island (CBBT; 37.0366, -76.0767) on 07/17/2017 at approximately 19:45 UTC with initial wind blowing very lightly from the east at CBBT and from the south at LaRC. This launched coordinated with the SERC water measurements. Preliminary analysis suggests a possible boundary layer around 1100 m at LaRC and a possible small inversion layer at about 200 m at CBBT and a possible boundary layer about 1000 m. Potential temperature was in close agreement between CBBT and LaRC from 900 m to 5000 m with nominal differences of less than 1 K. LaRC had a uniform profile from in the first 1000 m, whereas CBBT had a sharp decrease in the first 100 m and then a generally increasing theta profile until about 5000 m. Theta was slightly lower at CBBT in the first 900 m.

It should be noted that initially the CBBT ozone sonde had a 5 ppb offset compared to the surface monitor. Preliminary observations suggest similarly shaped ozone mixing ratio profile above CBBT and LaRC with slight variations in structure. While the profiles appear to have had similar profiles, the LaRC sonde reported values generally 15-20 ppbv higher than the CBBT sonde. Both ozone mixing ratio profiles generally increased from 800 m. The CBBT reported a drop in ozone at about 400 m and then sudden increase around 700 m. Further analysis is needed to investigate the data gathered from the CBBT ozone sonde.

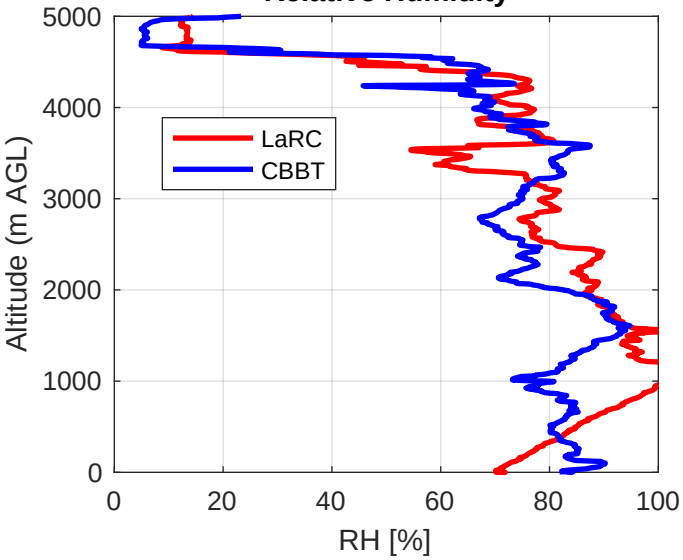
PLEASE NOTE: This data is preliminary and should not be used for official business until certified by NASA technical staff.

LaRC Sonde POC: John Sullivan (john.t.sullivan@nasa.gov)

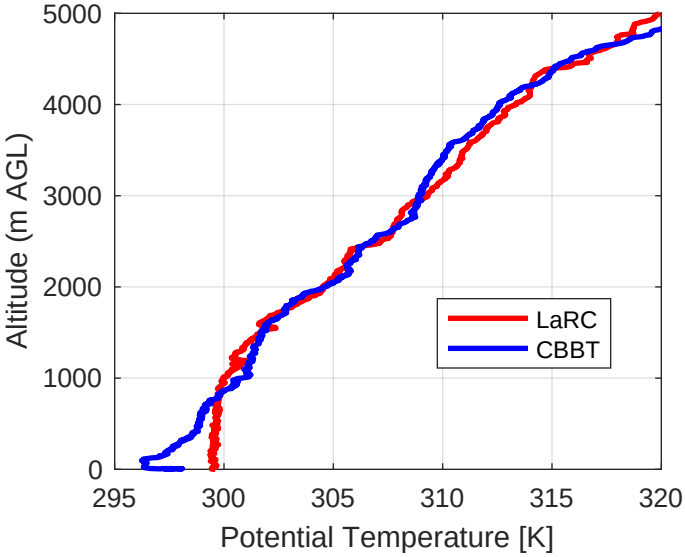
CBBT Sonde POC: Travis Knepp (travis.n.knepp@nasa.gov)

Sonde Data: 07/17/2017 19:50 UTC (LaRC) and 19:45 UTC (CBBT)

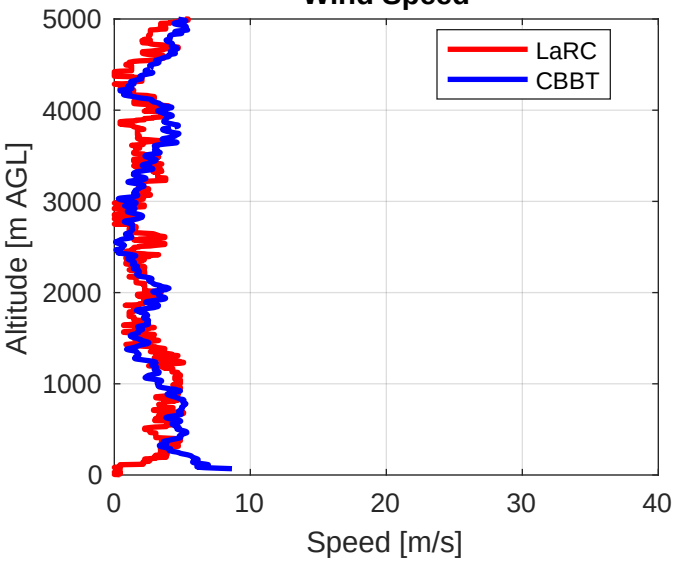
Relative Humidity



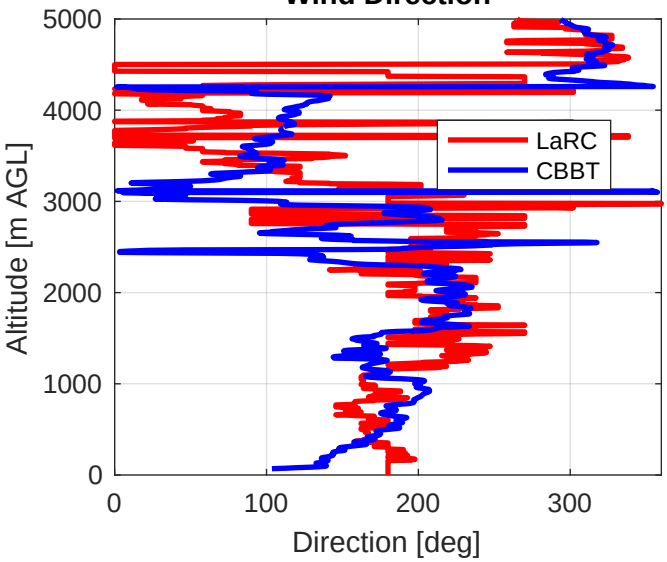
Theta



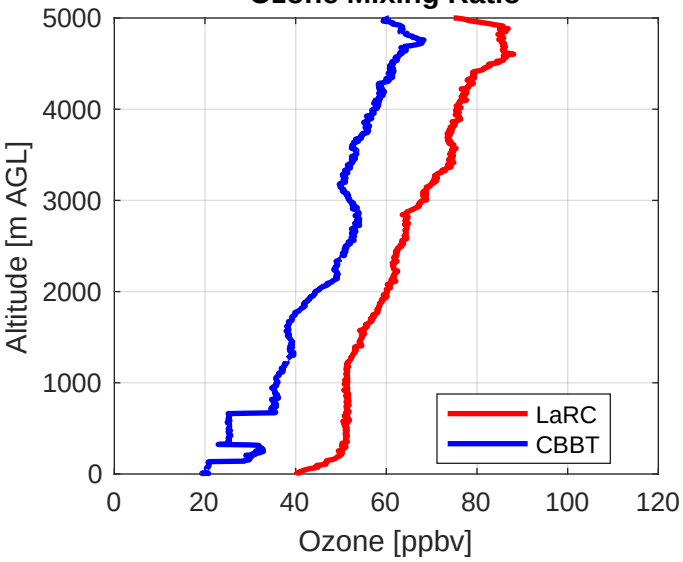
Wind Speed



Wind Direction



Ozone Mixing Ratio



Ozonesonde Map [ppbv]